

REMARKS

Claims 1-28 have been canceled. Claims 29-40 stand withdrawn from consideration. New Claims 41-67 are active in the present application. Reconsideration is respectfully requested.

The present invention relates to a process of treating permeable architectural materials by impregnation with material that provides a protective effect.

Claim Amendments

New Claims 41 to 67 are supported by the original claims 1 to 40 and pages 9-14. Entry of the new claims into the record is respectfully requested. The new claims that have been presented are consistent with the restriction requirement of record.

Invention

The present invention is directed to a process for treating a permeable architectural material that comprises spraying onto the architectural material having a surface to be treated, selected from the group consisting of fascia or building coatings, paving stones, architectonic concrete, tiles or any material based on a cement composition, concrete objects, terracotta, slate and stone, one or more liquid phase dispersions of at least one photocatalytic metal oxide or metal sulfide compound and at least one compound which promotes the adhesion of the photocatalytic compound to the architectural material, which impregnates the architectural material, and after spraying, removing liquid phase dispersion from the surface

of the architectural material and achieving the spontaneous curing of the at least one adhesion promoter which impregnates the permeable architectural material at ambient temperature.

Prior Art Rejection

Claim 1 stands rejected based on 35 USC 102(a) as anticipated by EP 0 633 064.

This ground of rejection is respectfully traversed.

It is clear that the '064 reference is of relevance to the present invention because it discloses a photocatalyst composite that is formed of a substrate having particles of a photocatalyst such as titanium oxide adhered thereto by an adhesive. The purpose for coating a substrate such as a metal, a plastic, an elastomer or the like (page 4, lines 40-43) is to provide by way of photocatalytic activity, a means of decomposing deleterious materials, malodorous materials and oily substances that are resident on a particular substrate. On the other hand, the present process as claimed differs critically from that of the reference by virtue of the fact that the substrates treated with a photocatalytic metal oxide or sulfide and adhesion promoter is an architectural material, the scope of which is clearly defined in Claim 1. Moreover, the protective, cleansing and preventing effect achieved in the present invention is **not** the result of the provision of a substrate with a surface coating as taught in '064, but rather is achieved as a result of the impregnation of the combination of a photocatalytic metal oxide or sulfide and adhesion promoter **into** the permeable structural material where the photocatalytic metal oxide or sulfide and adhesion promoter are fixed primarily in the penetrated interior of the architectural material. This difference is more

clearly set apart by the concluding step of the present process in which applied (sprayed on) liquid dispersion(s) is (are) removed from the surface and at the same time the materials which penetrate the architectural material spontaneously undergoes fixation by curing of the penetrated material. Such is not taught or suggested by the reference, and therefore the rejection of the claims is believed obviated. Withdrawal of the rejection is respectfully requested.

Claims 1 and 2 stand rejected based on 35 USC 102(a) as anticipated by JP 11-049588. This ground of rejection is respectfully traversed.

It is clear that the '588 reference is of a related technology in that it discloses the application of fine particles of a photocatalyst such as titanium oxide or zinc oxide in combination with a binding material by spraying or the like to a surface of natural stone. Subsequently, at least one antibacterial metal of Ag, Cu, Zn or Sn is applied with a binder to the treated stone. The purpose of the treatment is to provide a means of decomposing pollutants which come into contact with and adhere to the stone surface. To complete formation of the protective surface layer, the coated stone must be heated to a high temperature of 300 to 600° C to firmly adhere the photocatalyst and the antibacterial metal. On the other hand, the reference contains no disclosure of the application of a photocatalyst to an architectural material in a way (spraying) that achieves below surface penetration (impregnation) of the photocatalyst in order to achieve a protective effect. Moreover, whereas the reference requires a high temperature treatment in order to fix the applied materials on the surface of the stone, the present invention, in quite a marked contrast,

Appln No. 10/054,955
Reply to the Office Action of July 31, 2003

achieves fixation of the photocatalyst in the below surface interior of an architectural material spontaneously at ambient temperature. Clearly, '588 does not anticipate the present process and withdrawal of the anticipatory ground of rejection is respectfully requested.

Claims 3-28 stand rejected based on 35 USC 103(a) as obvious over EP 0 633 064 or JP 11-049588. This ground of rejection is respectfully traversed.

The rejection of the indicated claims is respectfully traversed for the reasons discussed above. Stated simply, neither of the cited references teaches or suggests the below surface impregnation of an architectural material of a dispersion of photocatalyst and adhesion promoter, wherein, at the time of impregnation of the materials, the same are fixed in position in the interior of the object being treated by the spontaneous curing of materials at ambient temperature. Accordingly, the dependent claims are believed to be distinguished over the cited and applied prior art. Moreover, the references do not show or suggest the aspects of the dependent claims in relation to the method of the invention as claimed in claim 1. Accordingly, the obviousness ground of rejection is believed obviated and withdrawal of the same is respectfully requested.

Appln No. 10/054,955
Reply to the Office Action of July 31, 2003

It is now believed that the application is in proper condition for allowance. Early notice to this effect is earnestly solicited.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.



Jean-Paul Lavalleye
Attorney of Record
Registration No. 31,451

Frederick D. Vastine, Ph.D.
Registration No. 27,013

Customer Number

22850

(703) 413-3000

Fax #: (703) 413-2220

NFO/FDV